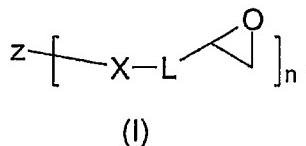


Claims

1. A dental root canal sealing composition, which comprises
- an amino terminated prepolymer having a viscosity at 23°C of less than 100 Pas, which is obtainable by reacting
 - one mole of a compound of the following formula (I)



wherein

Z represents

an n-valent C₂₋₄₂ hydrocarbon group, which groups may contain 1 to 6 oxygen atoms, and which may be substituted by 1 to 6 C₁₋₄ alkyl groups;

X represents

a single bond or
an oxygen atom or a nitrogen atom substituted by a C₁₋₆ alkyl group;

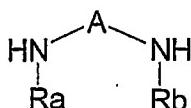
L represents

a single bond or
an optionally substituted C₁₋₁₆ alkylene group,
an optionally substituted C₆₋₁₄ arylene group,
an optionally substituted C₇₋₁₆ alkylenearylene group,
an optionally substituted C₇₋₁₆ arylenealkylene group,
which groups may be substituted by 1 to 6 C₁₋₄ alkyl groups; and

n represents

an integer of from 2 to 6; and

- at least n moles of one or more compounds
 - of the following formula (II)



(II)

wherein

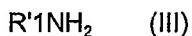
A represents a divalent saturated aliphatic C_{2-16} hydrocarbon group or a divalent saturated cycloaliphatic C_{3-6} hydrocarbon group, which groups may contain 1 to 6 oxygen atoms, and which may be substituted by 1 to 6 C_{1-4} alkyl groups;

R_a and R_b are the same or different and represent

a hydrogen atom, a C_{1-6} alkyl or a C_{3-14} cycloalkyl group, which may be substituted by one or more members of the group selected from a C_{1-4} alkyl group, C_{1-4} alkoxy group, a phenyl group, and a hydroxy group;

or

(b2) of formula (III)

wherein R' represents

a substituted or unsubstituted C_1 to C_{18} alkyl group,

a substituted or unsubstituted C_3 to C_{18} cycloalkyl group,

a substituted or unsubstituted C_7 to C_{30} aralkyl group, which groups may be substituted by one or more members of the group selected from a C_{1-4} alkyl group, C_{1-4} alkoxy group, a phenyl group, and a hydroxy group,

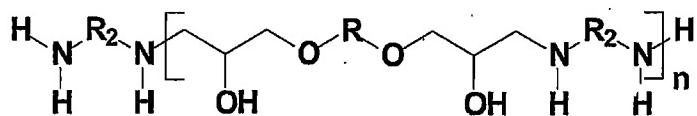
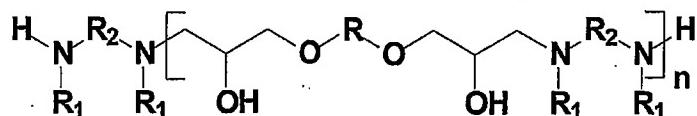
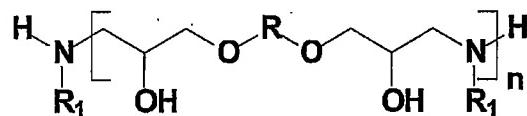
optionally in combination with a further di- or polyamine compound;

- (ii) a compound capable of undergoing polyaddition with the amineterminated prepolymer (i);
- (iii) 40 to 85 wt.-% of a filler for providing a minimum radioopacity of at least 3mm/mm Al.

2. The dental root canal sealing composition according to claim 1, wherein

Z represents a saturated aliphatic C₂₋₁₈ hydrocarbon chain which may contain 2 to 4 oxygen atoms, and which may be substituted by 1 to 6 C₁₋₄ alkyl groups or a substituted or unsubstituted C₇ to C₃₀ arylenealkylenearylene group which may be substituted by 1 to 6 C₁₋₄ alkyl groups.

3. The dental root canal sealing composition according to claim 1 wherein X is an oxygen atom and/or L is an alkylene group, preferably a methylene group, and/or wherein X-L is -OCH₂-.
4. The dental root canal sealing composition according to claim 1, wherein n is 2.
5. The dental root canal sealing composition according to claim 1, wherein the amineterminated prepolymer is a prepolymer of one of the following formulas



wherein

R represents Z as defined in claim 1, preferably a divalent

substituted or unsubstituted C₁ to C₁₈ alkylene group,
 substituted or unsubstituted C₆₋₁₄ arylene group,
 substituted or unsubstituted C₃ to C₁₈ cycloalkylene group,
 substituted or unsubstituted C₇ to C₃₀ arylenealkylenearylene group,

R₁ represents

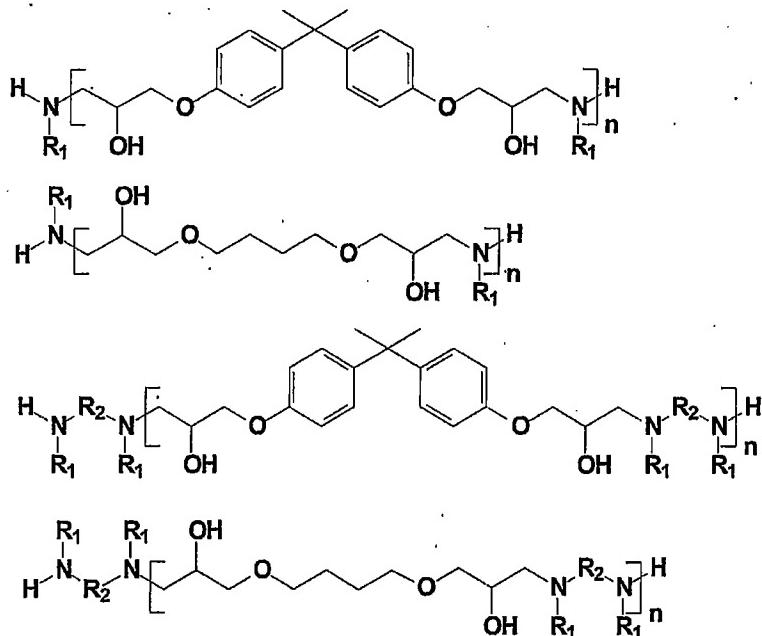
hydrogen or
 a substituted or unsubstituted C₁ to C₁₈ alkyl group,
 a substituted or unsubstituted C₃ to C₁₈ cycloalkyl group,
 a substituted or unsubstituted C₇ to C₃₀ aralkyl group,

R₂ represents a divalent

substituted or unsubstituted C₁ to C₁₈ alkylene group,
 a substituted or unsubstituted C₃ to C₁₈ cycloalkylene group,
 a substituted or unsubstituted C₇ to C₃₀ arylene group, and

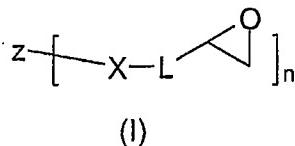
n is an integer.

6. The dental root canal sealing composition according to claim 5, wherein the amineterminated prepolymer is a prepolymer of one of the following formulas



wherein R¹ and R² are defined as in claim 5.

7. The dental root canal sealing composition according to claim 1, wherein the compound capable of undergoing polyaddition with the amineterminated prepolymer (i) is selected from a di- or polyfunctional acrylate, a di- or polyfunctional epoxide, a di- or polyfunctional isocyanate, a di- or polyfunctional isothiocyanate, a di- or polyfunctional acylamide, or a di- or polyfunctional maleimide.
8. The dental root canal sealing composition according to claim 1, wherein the filler contains La₂O₃, ZrO₂, BiPO₄, CaWO₄, BaWO₄, SrF₂, Bi₂O₃.
9. The dental root canal sealing composition according to claim 1, which is in the form of a two-component composition.
10. The dental root canal sealing composition according to claim 12, wherein the two-component composition is a powder/liquid or a paste/paste system.
11. Use of the dental material of claim 1 for the manufacture of prefabricated root canal cones.
12. an amino terminated prepolymer having a viscosity at 23°C of less than 100 Pas, which is obtainable by reacting
 - (a) one mole of a compound of the following formula (I)



wherein

Z represents an n-valent C₂₋₄₂ hydrocarbon group, which groups may contain 1 to 6 oxygen atoms, and which may be substituted by 1 to 6 C₁₋₄ alkyl groups;

X represents

- a single bond or
- an oxygen atom or a nitrogen atom substituted by a C₁₋₆ alkyl group;

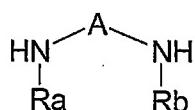
L represents

- a single bond or
- an optionally substituted C₁₋₁₆ alkylene group,
- an optionally substituted C₆₋₁₄ arylene group,
- an optionally substituted C₇₋₁₆ alkylarylene group,
- an optionally substituted C₇₋₁₆ arylalkylene group,
- which groups may be substituted by 1 to 6 C₁₋₄ alkyl groups; and

n represents

- an integer of from 2 to 6; and

- (b) at least n moles of one or more compounds
- (b1) of the following formula (II)



(II)

wherein

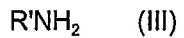
A represents a divalent saturated aliphatic C₂₋₁₆ hydrocarbon group or a divalent saturated cycloaliphatic C₃₋₆ hydrocarbon group, which groups may contain 1 to 6 oxygen atoms, and which may be substituted by 1 to 6 C₁₋₄ alkyl groups;

R_a and R_b are the same or different and represent

a hydrogen atom, a C₁₋₆ alkyl or a C₃₋₁₄ cycloalkyl group, which may be substituted by one or more members of the group selected from a C₁₋₄ alkyl group, C₁₋₄ alkoxy group, a phenyl group, and a hydroxy group;

or

- (b2) of formula (III)



wherein R' represents

a substituted or unsubstituted C₁ to C₁₈ alkyl group,
a substituted or unsubstituted C₃ to C₁₈ cycloalkyl group,
a substituted or unsubstituted C₇ to C₃₀ aralkyl group, which
groups may be substituted by one or more members of the group
selected from a C₁₋₄ alkyl group, C₁₋₄ alkoxy group, a phenyl
group, and a hydroxy group,

optionally in combination with a further di- or polyamine compound,

in a dental composition.